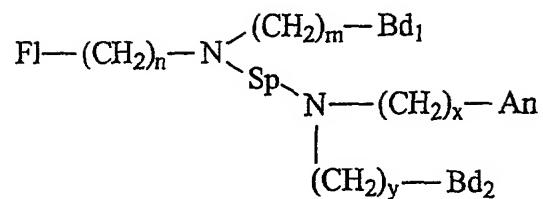


Abstract

Disclosed is a modular fluorescence sensor having the following general formula:

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Where Fl is a fluorophore, N is a nitrogen atom, Bd₁ and Bd₂ are independently selected binding groups, Sp is an aliphatic spacer, and An is an anchor group for attaching the sensor to solid substrates. n = 1 or 2, m = 1 or 2, x is an integer, and y = 1 or 2. The binding groups are capable of binding an analyte molecule to form a stable 1:1 complex. In a preferred embodiment, the Bd₁ is R₁-B(OH)₂ and Bd₂ is R₂-B(OH)₂. R₁ and R₂ are aliphatic or aromatic functional groups selected independently from each other and B is a boron atom. The present invention also provides methods of synthesizing a modular fluorescence sensor and its use in labeling solid substrates.